

**ABSTRACT OF THE DISCLOSURE**

A graft, for example, an arterio-venous shunt graft, is provided, which in a first aspect of the subject invention, is formed with longitudinal ribs. With fibrotic tissue ingrowth between the ribs, a composite rib/tissue layer is formed about the graft. The ribs provide counteracting lateral force against the embedded tissue to seal punctures formed therethrough during hemodialysis procedures. To provide additional surface area for puncturing, the graft may be formed with a truncated cross-section. With a second aspect of the invention, the graft is mounted onto a strip to prevent kinking, twisting or bending during an implantation procedure.